



## **Internal Control Over Financial Reporting, Organizational Complexity, and Financial Reporting Quality**

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### **ABSTRACT**

As financial reporting has become an integral source for economic decision-making, Internal Control over Financial Reporting (ICOFR) is often necessary to ensure its reliability. Also, diversification will lead to operational and informational complexity and ultimately affect the financial reporting quality. While much research on ICOFR has been conducted in countries that require companies to disclose their internal control (IC) deficiencies, there is rarely any research focusing on the issue in countries without such regulation like Indonesia, where ICOFR is difficult to be observed by external parties. This study is therefore aimed to examine the effect of ICOFR and organizational complexity on financial reporting quality. The current study also attempts to develop a scoring system to assess the effectiveness based on management disclosure of ICOFR activities in annual reports. This study presents some empirical evidence that ICOFR indeed has a positive influence on financial reporting quality while the organizational complexity turns out to negatively affect financial reporting quality.

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## INTRODUCTION

According to Conceptual Framework of Financial Accounting Standards (IFRS), there are some important qualitative characteristics of financial reporting such as predictive and feedback value, timeliness, neutrality and representational faithfulness. The extent to which the four values are well represented in the financial reporting depends on various factors. These factors, at the company level, include Internal Control Over Financial Reporting (ICOFR) and organizational complexity.

ICOFR is a series of activities undertaken by all members of the company and designed to provide reasonable assurance that its financial reports are reliable (COSO, 2006; Nalukenge et al., 2017), and the Committee of Sponsoring Organizations of the Treadway Commission (COSO) argues that ICOFR can ensure the reliability of the financial reports because they are free from material misstatements. In this case, an effective control can in fact identify fraud, inaccurate accounting records and inconsistent application of accounting standards (Ashbaugh-Skaife et al., 2008; Donelson et al., 2016). ICOFR can also mitigate any risks inhibiting the objectives of the financial reporting, such as the absence of solutions to the identified fraud and the lack of management awareness of the quality of the financial reports. This implies that an ineffective ICOFR is likely to result in poor quality financial reports.

In order to maintain the financial report quality, it is likewise vital that business strategies that relate to company environment are employed, one of which is the idea of diversification. This strategy can create various business lines, allowing the firm to develop into several divisions. Consequently, getting difficult in coordinating and increase internal bureaucracies (Hashai, 2015), resulting in information asymmetry which then might increase the risk of impaired quality of financial reporting.

Important though it seems, studies of ICOFR have rarely been conducted in countries that do not require the disclosure of the weaknesses of ICOFR, such as Indonesia. Most of studies of ICOFR were performed in countries that already regulate ICOFR like SOX 302 and 404 in the United States (Doyle et al., 2007; Lai et al., 2017). Concerning the lack of research on ICOFR, Kinney (2000) and Chalmers et al. (2019) pinpoint that the underlying problem is the difficulty for researchers to directly assess the effectiveness of ICOFR. This study therefore offers solutions to these problems by developing a scoring list to assess the effectiveness of ICOFR.

It is true that some researchers (Van de Poel and Vanstraelen, 2011; Ying, 2016) have developed some scoring schemes for IC assessment, but their studies are laden with inconsistent results, presumably because the scorings are not specially developed for ICOFR and they are less comprehensive. In contrast, the present study attempts to develop a scoring system that specifically measures ICOFR and assesses broader aspects. These scoring instruments are developed based on evaluation tools by COSO (2006) and modified using relevant literature (Deumes and Knechel, 2008).

Another salient difference is that the present study utilizes four measurements of financial reporting quality, much more robust than most previous studies on ICOFR and organizational complexity which only use one or two. Given the multiple measurements applied, it is expected that this research will provide more comprehensive insight on how ICOFR and organizational complexity can influence the quality of financial reporting in various dimensions. In particular, this study will analyze the impact of ICOFR and organizational complexity on four dimensional measurements of the financial reporting quality, which are predictive and feedback value, timeliness, neutrality and representational faithfulness.

## LITERATURE REVIEW AND HYPHESIS DEVELOPMENT

### Internal Control over Financial Reporting and Financial Reporting Quality

ICOFR framework is basically an extension of the internal control (IC) framework. There are several frameworks such as COSO, Basle, the Combined Code and Turnbull Guidance, Criteria of Control Board Guidance and Control (Jokipii, 2010; Rahim et al., 2018) with the COSO framework being the most widely used recently around the world (Ji et al., 2017). In 2006, COSO introduced ICOFR framework aimed at ensuring the reliability of financial reports so as to adjust with the obligations of SOX (Rubino and Vitolla, 2014; Lai et al., 2017), the document of which was titled *Internal Control Over Financial Reporting-Guidance for Smaller Public Companies*.

The basic concept of the relationship between the effectiveness of internal control and the quality of financial information is based on Study D'Mello et al. (2017) which explains the statement of the former US Securities and Exchange Commission (SEC) chairman that the quality of information to shareholders is determined by internal controls. Their statement concluded that ineffective ICOFR would cause misstatements in financial reporting. The failure to prevent or detect fraud or misstatements in the financial reporting process will worsen its quality. Control activities should be able to warn management in case of irregularities that could potentially lead to misstatements or fraud in financial reporting (Ashbaugh-Skaife et al., 2008; Donelson et al., 2016). Some studies add that ICOFR's ineffectiveness will as well cause low quality of financial reporting (Donelson et al., 2016). At this point, based on the agency-theory perspective, ICOFR can be an oversight component and is expected to align the interest between the principal and the agent, and this oversight function of ICOFR, according to the COSO framework, encompasses five components such as control environment, risk assessment, control activities, information and communication and monitoring.

Nonetheless, although many realize that ICOFR is essential, researchers find it difficult to directly observe and assess the quality of ICOFR since ICOFR activities are normally integrated into the company's operational activities (Deumes and Krechel, 2008; D'Mello et al., 2017). External parties often rely on voluntary disclosure by the management to obtain any information regarding the design and implementation of ICOFR, which can serve as a detailed description of its effectiveness (Chalmers et al., 2019). Following the practice in previous disclosure studies (Ji et al., 2017), this study also uses annual reports as a source of information to assess the effectiveness of ICOFR.

In Indonesia, the practice of disclosure of IC for public companies, particularly ICOFR, is voluntary. The general rule concerning IC for public companies per se was put into effect in 2006 when the Bapepam-Lembaga Keuangan<sup>1</sup> issued the Regulation No.KEP-134/BL/2006 concerning Obligation to Submit Annual Reports and it was then updated by Financial Services Authority in 2016<sup>2</sup>. In the context of IC, this rule has not changed significantly because it still does not set the standard format and does not apply specifically to ICOFR. This regulation requires management to elaborate the implementation of its IC system.

In relation to ICOFR, Indonesia has adopted the IC framework formulated by the COSO for its disclosure practice, and assessment towards the ICOFR practices is undeniably relevant. It is in fact urgent considering that there have been several serious cases of fraudulent financial statements in some Indonesian companies such as Lippo Bank, Kimia Farma and Indofarma (Siregar and Tenoyo, 2015). These cases can serve as grounds why policies regarding the ICOFR practices have become rather crucial in Indonesia.

Strongly associated with ICOFR, IC is especially conducted to ensure the protection of the firm's assets and to give assurance regarding the reliability of financial reports. In evaluating these reports, ones would use earnings as an important source of information because either investors or analysts normally take into account earnings when making investment decisions (Dichev et al., 2013; Hosseini et al., 2016). Following this argument, the current study will hence use the construct of earnings to measure the financial reporting quality.

Earnings is a summary of performance that is prepared using accrual basis (Han, 2010; Zhang, 2016), which in turn allows manager to estimate and justify the accounting treatment of transactions. Nonetheless, there are two explanations why the accrual can lead to low quality of financial reporting (Doyle et al., 2007; D'Mello et al., 2017). First, management usually behaves opportunistically, resulting in biased accrual estimation, and secondly, unintentional mistakes are likely to occur as the management finds it difficult to predict the transactions accurately. These factors may impair the quality of the financial reporting if they are not detected and rectified earlier.

Some research enumerate some characteristics of quality reporting based on the FASB, such as predictive and feedback value, timeliness, neutrality, and representational faithfulness (Velury and Jenkins, 2006; Jaggi et al., 2015; Ying, 2016; Lourenço et al., 2018). The first component is an indicator of how financial information should be able to predict the condition of the company and to confirm these predictions, particularly with respect to the ability to generate cash flow. The notion of timeliness refers to how the information will lose its relevance to decision-making process if it is not available in time. Next, neutrality implies that the information is not

<sup>1</sup> As of 1 January 2013, OJK (Financial Services Authority) is established to regulate and supervise the activity of financial services in the Banking Sector, financial services in the Capital Market sector, and financial services in Insurance, Retirement Fund, Financial institutions, and other Financial Services Institutions sector (in accordance with the Law of the Republik Indonesia Number 21 of 2011 concerning Financial Services)

<sup>2</sup> (Financial Services Authority Circular Letter number 30 /SEOJK.04/2016 concerning Forms and Content of Annual Reports of Issuers or Public Companies).

biased and does not tend to benefit only one party (Ji et al., 2017). Lastly, the information is said to be faithfully represented if management reports all transactions and events to investors accurately. These company's values mirror how investors will assess the accuracy of earnings (Hosseini et al., 2016; Lennox et al., 2016).

Ineffective ICOFR is more likely to lead to poor quality of financial reporting. To illustrate, when ICOFR is indeed ineffective, it is incapable of both preventing and detecting any errors or misstatements or it fails to mitigate any opportunistic attempts to manipulate the financial reports (Doyle et al., 2007; Han, 2010; Ji et al., 2017). On the other hand, effective ICOFR can be reflected in the company's commitment to disclose any essential information concerning the implementation of ICOFR. Effective ICOFR is expected to help mitigate the agency problem because it increases the reliability of the financial reporting. Accordingly, it can immediately detect any material misstatements due to fraud in the financial reports so that corrective actions can be taken. This will finally make financial reporting more relevant and reliable.

Conceptually, ICOFR has the potential to enhance the quality of financial reports. Many researchers have proven that ICOFR have an impact on the improvements of financial reports quality (Doyle et al., 2007a; Ashbaugh-Skaife et al., 2008; Ying, 2016; Ji et al., 2017). This empirical evidence substantiates the effectiveness of ICOFR in ensuring that the financial reports are free of material misstatements.

The present study argues that the implementation of effective ICOFR will improve the quality of financial reports, pinpointing the positive effects of ICOFR on four dimensions of financial reporting quality, which are predictive and feedback value, timeliness, neutrality and representational faithfulness. Effective ICOFR should therefore be able to detect errors and suggest corrective measures for such errors, which might stem from either unintentional error in estimated accruals or even to manage earnings (Doyle et al., 2007; Jaggi et al., 2015). It is likewise inferred that ICOFR can reduce earning management or can boost the predictive value and neutrality of financial reporting.

ICOFR gives a reasonable assurance that financial report has no material misstatements. In addition, the quality of preparatory process of financial reporting is related to its qualitative indicators like timeliness (Abernathy et al., 2015) and for this reason, ICOFR can contribute to better timeliness of reporting. Effective ICOFR also enables investor to assess firms' actual condition so they can estimate the investment risks, meaning that the increased accuracy of earnings will have a positive impact on representational faithfulness. Based on these arguments and some previous studies, the hypothesis tested in this study is:

*H1: The ICOFR positively affects financial reporting quality.*

### **Organizational Complexity and Quality of Financial Reports**

Diversification encourages firms to enter various business lines to increase their revenue. Over the decades, diversification is a common observation among public companies in Indonesia with 40% of those companies in Indonesia already diversified (Akben, 2015). Diversification is a strategy to boost performance as operations become more efficient and it can eventually increase economies of scope (Akben, 2015), but the consequence is that organizational structure becomes more complex and it is challenging to accommodate new divisions that will manage all business lines. Diversification also increases operational complexity, internal information and contract costs, and risks of power and reputation (Schmid and Walter, 2012; Masud et al., 2017). As a result, the complexity of information flow and operational activities will inevitably lead to information asymmetry.

When management decides to diversify, it may be that they sacrifice the interests of shareholders for the benefit of management (Akben, 2015). For instance, it is not wise for a manager to use free cash flow, which can potentially reduce shareholders' wealth (Jensen, 1986; Masud et al., 2017). Thus, one should consider the possibility that organizational complexity will emerge as a consequence of diversification.

The empirical evidence regarding the effect of organizational complexity on the quality of financial reports has somewhat been inconsistent. Mohammad and Nguyen, (2018) confirm that information asymmetry in complex firms increase earnings management, whereas Masud et al., (2017) find no effect of organizational complexity on earnings management. Conceptually, diversification will cause a rise in operational and informational complexity so that the management can utilize the private information for profit. Accounting problems are also more likely to occur since transactions carried out are increasingly complicated. Hence, the management will face a bigger challenge in improving the quality of financial reporting.

Another concern is that organizational complexity brings about impairment in the predictive and feedback value because of the difficulty to predict the real divisional cash flow. A more sophisticated

organizational structure will as well pose more challenges to the coordination and distribution of information, and this could potentially impede the timeliness of reporting. Investors would find it difficult to predict company performance and estimate the ability to generate future cash flows (Lennox et al., 2016). Based on this argument and some previous studies, the second hypothesis to be tested is:

*H2: Organizational complexity negatively affects financial reports quality.*

## METHODOLOGY

### Sample Selection

The sample for this study is comprised of all firms registered in Indonesia Stock Exchange from 2007 to 2012, with the exception of financial firms. The selection of the commencement year is based on the issuance of COSO's ICOFR framework in June 2006 and therefore, it is assumed that the framework was initially implemented in 2007. Disclosure of ICOFR in Indonesia is voluntary and the format is not standardized unlike that of some other countries especially the US, which regulates the practice of ICOFR disclosure, Indonesia listed companies on the New York Stock Exchange (NYSE) that are excluded, making the obtained scores comparable. With these criteria and with the outliers checked, this study covers a sample of 1056 firms per year and the data are in the form of a balanced panel data set. Based on Chow, Breusch Pagan Lagrange Multiplier and Hausman test, the hypothesis is to be analyzed using the panel data and the fixed effect regression model. The equation used to test the hypotheses can be seen in table 2.

### Definition of Variables

This study assesses financial report quality constituted by four dimensions, which are predictive and feedback values, timeliness, neutrality and representational faithfulness. The testing of hypotheses H1 and H2 will be run based on the four measures of the financial report quality. The four dimensions are scrutinized using the following criteria. Dechow (1994) stated that the reported earnings at the end of the fiscal year period should predict cash flow in the next period. Based on this argument, following Ebirien et al. (2019) the predictive and feedback value is measured by linking earnings to future cash flows. Concerning timeliness, the sooner a company reports their financial reports to the authorities since the end of its fiscal year, the timelier it is (Abernathy et al., 2015). In respect to the idea of neutrality, when management conducts earnings management, the reported earning is biased because it brings advantage only to a particular party. Earnings management is measured with absolute accruals as modified Jones (Dechow et al., 1995; Ji et al., 2017). Lastly, representational faithfulness is measured by linking profits to stock returns utilizing the earnings coefficient response (Velury and Jenkins, 2006; Hosseini et al., 2016).

This study bases its analysis on ICOFR framework developed by COSO (2006). The assessment of effective ICOFR is done with a 24-item scoring scheme which is specifically concerned with ICOFR practice (Appendix 1). This study subsequently measures the effectiveness of ICOFR based on the disclosure of the annual reports. Following Schommer et al. (2019), complexity of organization is measured using the entropy index developed by Jacquemin and Berry (1979).

Based on the previous relevant studies, (Jaggi et al., 2015; Masud et al., 2017), some other variables such as size, leverage, loss and growth are regarded as control variables. Large companies are subject to greater attention from the public and analysts and therefore tend to report high-quality financial reports (Hosseini et al., 2016), whereas losing companies will try to obscure theirs by delaying the report (Lourenço et al., 2018) and performing earnings management. Companies with higher debt will normally perform earnings management in order to reduce the possibility of violating the debt covenant and having low earnings informativeness. Growing companies tend to report high-quality financial reports (Abbadi et al., 2016).

## RESULT AND DISCUSSION

Descriptive statistics are presented in Table 1. The present study determines whether the data is normally distributed by observing the skewness, and the outliers of the variables are examined and winsorized. Overall, the companies being scrutinized have a positive operating cash flow (*CFO*). The average number of days (*LAG*) of submission to the stock exchange authority is 94 days after the fiscal year ends. The observed companies also have relatively small discretionary accruals (*ABDAC*). In addition, the samples also demonstrate a positive stock return (*RET*). Many of the companies report their profits before extraordinary events and discontinuation of operations (*INCOM*). This condition is reflected in the small number (16.3%) of companies reporting losses (*LOSS*). Changes in income before extraordinary events and discontinuation of operations (*DNIBE*) are as well positive on an average.

The average level of organizational complexity (*CMPLX*) is 0.45. ICOFR variable has a mean of 0.512 with not so many variations (standard deviation is 0.102). The total score of the effectiveness of ICOFR for each company refers to the sum of all items and then weighted using the multiplication of the highest value and the number of items used. The list of questions used to score the ICOFR effectiveness in this research is relatively new and consequently, validity and reliability testing is necessary. Tests show that the 24 score items have Cronbach's alpha of 0.831, indicating that the scores of the ICOFR effectiveness can be used for the following analysis.

Table 1 Descriptive statistics

VARIABLES	MEAN	MAX	MIN	SD	SKEWNESS
CFO	0.080	0.438	-0.246	0.118	0.580
LAG (Days)	94	165	30	21	-0.480
ABDAC	0.089	0.436	0.000	0.089	1.965
RET	0.058	1.999	-1.087	0.675	1.134
INCOM	0.048	0.622	-0.756	0.123	-0.834
DNIBE	0.023	1.074	-1.062	0.282	-0.185
ICOFR	0.512	0.917	0.347	0.102	0.924
CMPLX	0.449	1.716	0.000	0.402	0.651
SIZE (billion IDR.)	249818	1084863	22575	185.079	-0.108
LEV	0.528	1.969	0.004	0.321	1.974
GRWT	0.182	1.543	-0.908	0.362	1.244

### ICOFR and Financial Report Quality

As presented in Table 2, the results of the regression are used to check on the hypotheses H1 and H2. It is shown that ICOFR has a significantly positive influence on predictive and feedback values as well as representational faithfulness, meaning that an effective ICOFR can increase these values and earnings informativeness. In contrast, ICOFR negatively predicts the number of days necessary to submit financial reports to the stock exchange authority. The findings suggest that an effective ICOFR enables a company to report earnings at the most favorable time. ICOFR likewise gives a significantly negative influence on discretionary accruals, which strongly implies that an effective ICOFR is able to decrease earnings management.

The results are consistent with previous studies in control mechanism, which have posited that effective control can boost predictive and feedback values (Altamuro and Beatty, 2010; Mollah et al., 2019) and that effective ICOFR can cut earnings management and enhance earnings informativeness (Doyle et al. 2007a; Ashbaugh-Skaife et al., 2008; Ji et al., 2017). As to the timeliness dimension, the results are line with the previous research of ICOFR, confirming that effective ICOFR may lead to better timeliness (Holder et al., 2016).

ICOFR can improve the quality of financial reports by reducing the number of either intentional or unintentional errors in estimating accrual transactions. Similarly, fraudulent behaviors in preparing financial reports can be anticipated and the levels of error in estimating accrual transactions can be minimized (Doyle et al., 2007; Ji et al., 2017). These conditions have positive impacts on predictive and feedback value of earnings and the ability to produce cash flows in the future. What is more, ICOFR can mitigate any opportunistic behaviors of the management (Han, 2010; Ji et al., 2017) so that financial information is expected to remain unbiased or neutral (Lee and Lee, 2013; Ji et al., 2017).

ICOFR reasonably ensures that financial reports are free of material misstatements, and the management's confidence in the quality of the preparation of financial reports is also related to the dimension of timeliness (Abernathy et al. 2015; Holder et al. 2016). Errors in a financial statement resulting from the inconsistent and inaccurate application of GAAP can be spotted and reduced (Nalukenge et al., 2018).

Consequently, the time needed to prepare a precise financial report that is in compliance with GAAP will be shorter.

Lennox et al. (2016) provides empirical evidence that investors typically pay attention to earnings quality before making any decisions to invest. As an effective ICOFR results in more accurate information, investors will ultimately react positively to the company's earnings information and such reaction is reflected in the stock price. This means that the earnings has a value of informational and representational faithfulness.

In summary, ICOFR has a vital role in increasing the quality of financial reports. Studies have found that effective ICOFR will ensure the accuracy of a financial report with no material misstatements (Doyle et al., 2007; Skaife et al., 2013; Ji et al., 2017). The result suggests that the scoring developed in this study has an explanatory power to elucidate financial report quality. Empirical evidence shows that ICOFR can prevent and detect fraud, irregularities or material misstatements, thereby increasing the relevance and reliability of financial statements.

Moreover, sensitivity analysis shows that the scoring scheme is capable of providing a better statistical explanation than the one developed in earlier studies (Van de Poel and Vanstraelen, 2011). Finally, the findings support the hypothesis H1 in all dimensions of financial reporting quality.

Table 2 Regression of Icofr And Organizational Complexity on Financial Reporting Quality

$$(1) CFO_{it} = \alpha_0 + \alpha_1 INCOM_{it} + \alpha_2 ICOFRD_{it} + \alpha_3 CMPLX_{it} + \alpha_4 SIZE_{it} + \alpha_5 LEV_{it} + \alpha_6 LOSS_{it} + \alpha_7 GRWT_{it} + \alpha_8 INCOM_{it} * ICOFRD_{it} + \alpha_9 INCOM_{it} * CMPLX_{it} + \alpha_{10} INCOM_{it} * SIZE_{it} + \alpha_{11} INCOM_{it} * LEV_{it} + \alpha_{12} INCOM_{it} * LOSS_{it} + \alpha_{13} INCOM_{it} * GRWT_{it} + \epsilon_{it}$$

$$(2) LOGLAG_{it} = \alpha_0 + \alpha_1 ICOFRD_{it} + \alpha_2 CMPLX_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 LOSS_{it} + \alpha_6 GRWT_{it} + \epsilon_{it}$$

$$(3) ABDAC_{it} = \alpha_0 + \alpha_1 ICOFRD_{it} + \alpha_2 CMPLX_{it} + \alpha_3 SIZE_{it} + \alpha_4 LEV_{it} + \alpha_5 LOSS_{it} + \alpha_6 GRWT_{it} + \epsilon_{it}$$

$$(4) Ret_{it} = \alpha_0 + \alpha_1 DNIBE_{it} + \alpha_2 ICOFRD_{it} + \alpha_3 CMPLX_{it} + \alpha_4 SIZE_{it} + \alpha_5 LEV_{it} + \alpha_6 LOSS_{it} + \alpha_7 GRWT_{it} + \alpha_8 DNIBE_{it} * ICOFRD_{it} + \alpha_9 DNIBE_{it} * CMPLX_{it} + \alpha_{10} DNIBE_{it} * SIZE_{it} + \alpha_{11} DNIBE_{it} * LEV_{it} + \alpha_{12} DNIBE_{it} * LOSS_{it} + \alpha_{13} DNIBE_{it} * GRWT_{it} + \epsilon_{it}$$

Dependent Var.	CFO			LOGLAG			ABDAC			RET		
Independent Var.	Exp.	Coef	p-value	Exp.	Coef	p-value	Exp.	Coef	p-value	Exp.	Coef	p-value
C	+/-	0.628	0.007***	+/-	5.500	0.000***	+/-	0.447	0.058*	+/-	0.744	0.390
INCOM	+	0.297	0.003***									
DNIBE										+	0.644	0.001***
ICOFRD	+	0.133	0.083*	-	0.221	0.074*	-	0.184	0.007***	+	0.473	0.218
CMPLX	-	0.013	0.199	+	0.113	0.001***	+	0.006	0.380	-	0.024	0.420
INCOM* ICOFRD	+	0.863	0.075*									
INCOM*CMPLX	-	0.190	0.007***									
DNIBE* ICOFRD										+	2.275	0.040**
DNIBE*CMPLX										-	0.385	0.037**
SIZE	+	0.052	0.010**	-	0.084	0.017***	-	0.049	0.023**	+	0.082	0.360
LEV	-	0.020	0.233	-	0.160	0.000***	+	0.051	0.068*	-	0.012	0.470
LOSS	-	0.016	0.082*	+	0.083	0.000***	+	0.008	0.264	-	0.057	0.257
GRWT	-	0.012	0.063*	-	0.004	0.385	+	0.009	0.202	+	0.246	0.000***
INCOM*SIZE	+	0.053	0.201									
INCOM*LEV	-	0.031	0.362									
INCOM*LOSS	-	0.031	0.403									
INCOM*GRWT	-	0.149	0.044**									
DNIBE*SIZE										+	0.100	0.209
DNIBE*LEV										-	0.031	0.416
DNIBE*LOSS										-	0.483	0.011**
DNIBE*GRWT										+	0.408	0.007***
R <sup>2</sup>		0.1415			0.1017			0.0003			0.0727	
Prob > F		0.0000			0.0000			0.0034			0.0000	
N		1056			1056			1056			1056	

**Note: Dependent variables:** CFO<sub>it</sub>: operating cash flow one year ahead, scaled by total assets. LOGLAG<sub>it</sub>: number of the day between the ends of year fiscal to submitted financial report to stock exchange authority. ABDAC<sub>it</sub>: absolute accruals discretionary. Ret<sub>it</sub>: Market return for 1-year ending 3 months after the fiscal year end. **Independent variables:** ICOFRD<sub>it</sub>: scores of disclosures of ICOFR. CMPLX<sub>it</sub>: organizational complexity measured with entropy index. INCOM<sub>it</sub>: earnings before extraordinary items and discontinued operation scaled by total assets. DNIBE<sub>it</sub>: Change of earnings before extraordinary items and discontinued operation scaled by market value prior years. SIZE<sub>it</sub>: size of the firm, measured with log total assets. LEV<sub>it</sub>: leverage measured by total debt to total asset. LOSS<sub>it</sub>: dummy variable, 1 if the firm is reporting loss and 0 otherwise. GRWT<sub>it</sub>: sales growth. \*\*\* significant at α = 1% (one-tailed); \*\* significant at α = 5% (one-tailed); \* significant at α = 10% (one-tailed)

### **Organizational complexity and Financial Report Quality**

Based on the findings, it is evident that organizational complexity has a significantly negative influence on predictive and feedback values and representational faithfulness, which is opposite to the effect of ICOFR. These infer that higher rate of complexity leads to a drop in such values and earnings informativeness. However, organizational complexity is found to positively predict timeliness. The higher the complexity, the longer the time required to submit the financial report to the stock exchange authority.

As a managerial strategy, diversification can create a more complex environment in a company, and it is characterized by an increasing complexity of the organizational structure categorized into several divisions. According to the agency theory, complex companies have severe information asymmetry (Akben, 2015). The quality of information then deteriorates because of the low transparency caused by the information asymmetry in companies with complex structures (Alhadab and Nguyen, 2018). As a consequence, the predictive and feedback values drop, the financial report is submitted later than expected, and investors might think that complexity in the company becomes a major obstacle to providing a transparent report of such condition.

Regarding timeliness, previous studies finds that a firm of high complexity has a tendency to submit its financial report late (Sengupta, 2004; Ghafran et al., 2018). As diversification creates sophisticated organizational structure, increases managerial and operational complexity (Schmid and Walter, 2012; Alhadab and Nguyen, 2018), information asymmetry is increasingly inevitable, making it timelier to prepare a financial report. In a similar way, a complex firm commonly shows lower earning informativeness which is an aspect of representational faithfulness. This in turn shapes the investors' perception in that they think that the firm is unable to provide a transparent financial report due to its complexity. The less transparent report becomes an obstacle for investors to estimate risk and increase the adverse selection problem (Fitriani et al., 2017); as a result, investors react negatively to the financial statements presented by the company.

Consistent with Masud et al. (2017), complexity has no significant influence on accruals quality as a proxy for earnings management. These results indicate that in a diversified company, management does not carry out accrual discretion which reduces financial statements.

All in all, the findings confirm the hypothesis H2 in most dimensions of financial reporting quality, predictive and feedback values, timeliness and representational faithfulness.

### **Sensitivity analysis**

The ICOFR variables and organizational complexity are examined by means of sensitivity analysis. The sensitivity analysis for ICOFR is based on the scoring system of IC in general that is developed by Van de Poel and Vanstraelen (2011). Overall, the sensitivity analysis is consistent with respect to all dimensions except predictive and feedback values. This is presumably because IC in general is incapable of increasing the accuracy of the estimation of accruals performed by management, which is a task that is plausible to accomplish with ICOFR. The results show that ICOFR is constantly capable of ensuring the quality of financial report compared with the IC in general. This study also makes a comparison between ICOFR and IC in order to determine which is better as a determinant of the quality of financial reports based on the magnitude of the coefficients, significance, R2 (Frank et al., 2009; Jaggi et al., 2015) and the F-statistic. The result is that ICOFR variables are still relatively better when used to determine the quality of financial reports than the IC in general.

Concerning the second variable, sensitivity analysis uses Herfindahl index to measure organizational complexity. The analysis is consistent with hypothesis H2 in most dimensions. The more complex the organization is, the lower the predictive and feedback values are and the lengthier it becomes to disseminate financial statements after the end of the fiscal year. In agreement with the H2 for neutrality dimension, Herfindahl index shows that complexity has no significant influence on the neutrality of financial reports.

## **CONCLUSION**

It is empirically evident that ICOFR has a significant influence on the four dimensions of the quality of earnings. While ICOFR leads to an increase in predictive and feedback values, timeliness, neutrality and representational faithfulness. Organizational complexity negatively affects the three dimensions except neutrality, on which complexity has no significant impact.



The study of ICOFR has been prevalent in countries that require companies to disclose ICOFR weaknesses, but in countries where ICOFR disclosure has yet to be regulated, research on the topic is rather scarce. This is not without reason as, according to Kinney (2000) and Chalmers et al. (2019), the implementation of ICOFR is hard to observe. Therefore, this study has formulated a scoring system that can be applied in ICOFR observation in countries that have not issued any policies on ICOFR weaknesses. Future research should also take a firm's business strategy into account when studying the quality of financial report and monitoring mechanism.

Despite its potential, Indonesia Stock Exchange authority has yet to apply any ICOFR regulations to improve the quality of financial reporting. The presents study provides insights of ICOFR's integral roles in enhancing the quality of financial report. Scoring results reveal that public companies which have already implemented ICOFR are likely to maintain the effectiveness of its financial reporting process. This implies the authority should consider expanding the existing rules so that public companies are not only required to describe the IC, but they are also obliged should describe in more detail the IC and ICOFR practices.

Management accountants can use an accounting report as information to protect company's assets and capital allocation so that the business can run efficiently and effectively. To achieve this goal, the company can design ICOFR in a fashion suiting their own needs. Since management accountants have a special interest in financial report preparation and operational control (Chenhall, 2003; Brands and Holtzblatt, 2015). They can contribute by taking initiative to design and implement effective ICOFR. Their contributions are needed to identify risks that may impede the objectives of financial reports.

Nonetheless, there is a caveat regarding the ICOFR scoring which is based on information regarding the implementation of ICOFR—both specific and nonspecific. The total scores are obtained through one evaluator's justification, and the approach may entail different results if performed by a different evaluator. Hence, future research should consider a peer review to minimize the subjective justification.

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## APPENDIX

- 1 The company has code of conduct.
- 2 The Company has an adequate amount of independent Commissioners.
- 3 The Board of Commissioners discuss ICOFR.
- 4 The company sets the financial reporting goals and their association with ICOFR.
- 5 One of the tasks of IC unit is to ensure the reliability or the quality of financial report.
- 6 CFOs have an educational background in accounting and finance.
- 7 Management outlines the effectiveness of ICOFR.
- 8 The audit committee assesses the ICOFR effectiveness.
- 9 Human Resource policies that emphasize on integrity commitment and competence.
- 10 The audit committee discusses the process of drafting the financial report with the management.
- 11 Disclosing risk management activities on Financial Report reliability.
- 12 Having policies to manage risks that may affect the achievement of Financial Report objectives.
- 13 Disclosing the risks that may affect the achievement of Financial Report objectives.

- 14 The company has a separate risk management function.
- 15 The design of ICOFR activities considers effectiveness and efficiency.
16. The company reviews operational and financial reporting manual or procedures.
- 17 The company has the information technology policies that promote the goals of ICOFR.
- 18 The company discloses that the information is processed and distributed timely and in compliance with law and regulations.
- 19 Management follows up for audit finding identified.
- 20 Management reports on the ICOFR elements to the commissioner.
- 21 The audit committee discusses the problems related with the achievement of the objectives of financial statements by an external auditor.
- 22 Audit committee has an educational background in accounting or finance.
- 23 The company has a whistleblower policy.
- 24 The company is implementing ICOFR.